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ABSTRACT

The study evaluated the ability of six learning disabled adolescents with normal language ability and eight learning disabled adolescents with deficient language skills to appropriately mark ambiguous referents. Subjects were compared with control groups of normally achieving chronologically age matched adolescents and children matched with the language deficient group for vocabulary age. Children's narratives were analyzed for appropriately used referents. The learning disabled-deficient language subjects differed from both the learning disabled-normal language subjects and from language-age matched normal subjects in their appropriate use of referents. Deficiencies appeared to be of a quantitative rather than qualitative nature suggesting that learning disabled-language deficient children are similar to normally achieving children only delayed in their mastery of language skills. (DB)

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The Marking of Ambiguous Referents by Learning-Disabled Adolescents

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The ability to appropriately mark ambiguous referents is a complex skill. Not only must a speaker know the appropriate linguistic markers, he must be able to simultaneously focus on the linguistic and nonlinguistic contexts, remember aspects of previous utterances, and estimate the extent of his listeners attention and overall knowledge base. This complexity is evident in the fact that children do not typically master presuppositional referencing skills until 12-14 years.

Recent investigations have suggested that the development of this skill may be disrupted in children with learning disabilities. Caro and Schneider (1982) found that Learning disabled 14-16 year olds who also exhibited oral language deficits, had difficulties appropriately establishing a first mentioned referent. What is not clear from their investigation is whether the deficits were related to the children's learning disabilities, their language deficiences, or a combination of the two. Further, since the control group was matched for chronological age, it is not possible to determine whether the observed between group differences were quantitative or qualitative in nature.

The present investigation was designed to determine:

1. Whether children with learning disabilities, who do not exhibit language deficits, will differ from chronological

age matched normally acheiving children in their ability to mark ambiguous referents.

2. Whether children with learning disabilities, who do exhibit language deficits, will differ from language age matched normally acheiving children in their ability to mark ambiguous referents.

To this end 14 subjects were selected at random from a population of children enrolled in a High School learning disabilities program. Ten were male and four were female. Each child had a performance IQ of at least 85, as measured by the WISC-R, and a California Acheivement Test score below the 30th percentile. All were caucasion, all came from middle class home environments, and all exhibited hearing acuity that was within normal limits bilaterally.

The 14 LD subjects were divided into two groups based on the results of the PPVT-R and the Expressive One Word Picture Vocabulary Tests. Group 1, refered to as the Learning Disabled - Normal Language group, contained six subjects who exhibited expressive and receptive vocabulary abilities that were within one year of their chronological ages (Table 1). The median chronological age was 16;9, the median receptive vocabulary age was 17;2, and the median expressive vocabulary age was 16;5.

-----insert table 1 about here-----

Group 2, referred to as the Learning Disabled - Deficient Language group, contained eight subjects who's expressive and receptive vocabulary ages were found to be at least one year below their chronological ages (Table 2). The median chronological age was 15;1. The median receptive vocabulary age was 11;3. The median expressive vocabulary age was 12;6.

-----insert table 2 about here----

The subjects in groups 1 and 2 were matched on chronological age with a control group of normally acheiving adolesents chosen at random from the same High School as the LD children. The median chronological age for the control group was 16;4, the median receptive vocabulary age was 17;2, and the median expressive vocabulary age was 16;8 (Table 3). Four were male and two were female. All were caucasion, all came from middle class home environments, and all exhibited hearing acuity that was within normal limits bilaterally.

----insert table 3 about here----

A second control group of normally acheiving children was selected and matched with the Learning Disabled - Deficient Language group on Vocabulary age. The median Chronological age was 12;1, the median Receptive Vocabualry Age was 12;9, and the median Expressive Vocabulary Age was 12;6 (Table 4). Two were male and 3 were female. All were caucasion, all

came from middle class home environments, and all exhibited hearing
acuity that was within normal limits bilaterally.

----insert table 4 about here----

A narrative task was designed to provide the subjects with an opportunity to create and linguistically mark ambiguous referents. Each subject was shown six 1-minute segments of several video cartoon with the audio turned off. The cartoons were of the familiar Saturday morning variety including Mickey Mouse, Donald Duck, and Road Runner. The subjects were told that they would see each segment twice. During the first viewing they were to observe the action of the characters. During the second viewing they were to describe the ongoing action to a listener who could not see the TV screen on either showing.

This format was used because we believed it would minimize the effect of memory constraints and maximize the child's need to apply pragmatic knowledge, both linguistic and nonlinguistic, to the narrative task.

The children's narratives were audio recorded and later transcribed by two independent judges. Interjudge reliability was 90% based on line by line comparison.

The transcripts were then analyzed by two independent judges to determine the percent of appropriately used referents.

The referents were devided into 4 categories using an adaptation of a system suggested by Caro. The categories included:

Animate first mention referents (AFM)

Inanimate first mention referents (IFM)

Animate later mention referents (ALM)

Inanimate later mention referents (ILM)

The most common forms used to mark ambiguity for the Animate and Inimate First Mentioned Referents were:

The character's name	eg., Mickey Mouse
An indirect article + noun	eg., a girl, a ball
A characters roll or title	eg., fisherman

The most common forms used to mark ambiguity for Animate and Inanimate Later Mentioned Referents were:

A Direct article + noun	eg., the man, the rock
A Pronoun	eg., he, it

Interjudge reliability for the appropriateness of each referent was 93%.

Between group comparisons were made using the Mann Whitney-U test. The groups included:

Learning Disabled - Normal Language Ability

Learning Disabled - Deficient Language Ability

Chronological Age Matched Control (Normal Learning/Language)

Language Age Matched Control (Normal Learning/Language)

The dependent variable was the percent of appropriately used referents.

Independent analyses were conducted for each referent type including:

Animate first mentioned referents;

Inanimate first mentioned referents;

Animate later mentioned referents;

Inanimate later mentioned referents,

A comparison of the Learning Disabled - Normal Language group (LD - NL) and the Chronological-age matched control group indicated that the groups did not differ significantly on any of the factors measured (Table 5). This included animate first mentioned, inanaimate first mentioned, animate later mentioned, and inanimate later mentioned.

The Learning Disabled - Deficient Language group (LD - DL) differed significantly from the Chronological-Age Matched Control Group on 2 of the 4 factors measured, animate later mentioned, and inanimate later mentioned (Table 5). They did not differ significantly on animate or inanimate first mentioned.

The Learning disabled - Normal Language group (LD - NL) differed from the Learning Disabled - Deficient Language group (LD - DL) on 3 of the 4 factors measured, animate first mentioned, inanimate first mentioned, animate later mentioned (Table 5). They did not differ significantly on inanimate later mentioned.

The Learning Disabled - Deficient Langauge group (LD - DL) differed from the Language-age-matched control group on 2 of the 4 factors measured, animate later mentioned and inanimate later mentioned (Table 5). They did not differ significantly on either animate or inanimate first mentioned.

------insert table 5 about here-----

The results suggest that the strategies used to mark ambiguous referents by the Learning Disabled - Normal language subjects were sufficient to allow them to presuppose listener knowledge and appropriately apply the required linguistic rules. The Learning Disabled - Deficient Language group, while exhibiting normal strategies for creating first mentioned referents, had difficulty in appropriately marking later mentioned referents.

In addition, the fact that the Learning Disabled - Deficient Language group differed from the Language-age matched normal subjects, suggests

that the differences may have been qualitative as well as quantitative in nature.

To test this question further, within group analyses were conducted for each group across all referent types. The results suggest that the error patterns made by the Learning Disabled - Deficient Language group were similar to those of the control groups. Each group exhibited the most errors on the Animate Later Mention and the fewest errors on the Inimate Later Mention. In addition, a group of older Learning Disabled - Deficient Language subjects with a median chronological age of 17;3 was compared with the chronological age matched control group using the same measures previously discussed. Preliminary results of Mann Whitney-U Tests indicated no significant differences for any of the variables measured. This suggests that the referencing skills analyzed in this paper may be acquired by learning disabled children with deficient language abilities somewhere between 15 and 18 years or approximately 4 to 6 years later than normally acheiving children.

In conclusion, it appears that learning disabled children with deficient language ability, represent a different population than learning disabled children with normal language ability, with reguard to ambiguous referencing skills.

Further, the deficiencies exhibited appear to be quantitative rather than qualititative in nature suggesting that the strategies of the Learning Disabled - Deficient Language children are similar to those of Normallly acheiving children only delayed in their onset and mastery.

Finally, it seems that more difficulty is experienced in appropriately marking later mentioned referents than in creating first mentioned referents for normal as well as impaired children.

Table 1

LEARNING DISABLED
NORMAL LANGUAGE GROUP

Subject	CA	PPVT-R	EOWPVT	Sex
1	18;0	22;0	17;3	M
2	17;11	20;5	17;8	M
3	15;4	17;10	16;0	M
4	14;10	15;4	16;4	M
5	16;8	16;1	16;0	M
6	17;0	16;7	16;7	M
Median	16;9	17;2	16;5	

Table 2

LEARNING DISABLED
DEFICIENT LANGUAGE

Subject	CA	PPVT-R	EOWPVT	Sex
1	15;1	11;4	13;0	M
2	15;1	11;10	12;9	M
3	15;11	12;5	11;9	M
4	15;0	11;3	12;7	M
5	15;6	11;7	12;6	F
6	15;1	10;7	10;5	F
7	15;9	11;1	11;9	F
8	14;1	11;3	13;0	F
Median	15;1	11;3	12;6	

Table 3

LANGUAGE AGE MATCHED CONTROL GROUP

Subject	CA	PPVT-R	EOWPVT	Sex
1	11;10	10;7	11;6	M
2	12;4	13;4	12;4	M
3	12;1	12;9	12;7	F
4	12;2	16;10	14;5	F
5	11;8	11;0	12;6	F
Median	12;1	12;9	12;6	

Table 4

CHRONOLOGICAL AGE MATCHED CONTROL GROUP

Subject	CA	PPVT-R	EOWPVT	Sex
1	15;8	16;10	16;7	F
2	16;7	16;7	16;4	F
3	16;2	16;7	18;0	M
4	17;5	17;10	16;9	M
5	16;8	33;8	18;0	M
6	15;9	17;7	16;5	M
Median	16;4	17;2	16;8	

Table 5

BETWEEN GROUP COMPARISONS

	AFM	IFM	ALM	ILM
LD - NL C.A. Control	NS	NS	NS	NS
LD - DL C.A. Control	NS	NS	$<.05$	$<.01$
LD - NL LD - DL	$<.05$	$<.05$	$<.01$	NS
LD - DL L.A. Control	NS	NS	$<.05$	$<.05$

AFM = Animate First Mention
IFM = Inanimate First Mention
ALM = Animate Later Mention
ILM = Ininamate Later Mention